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12. (Amended) The system of claim 13, further comprising a current transformation means for receiving a fourth signal indicative of the current level within the alternator from the alternator and providing the first signal in response thereto.

13. (Amended) A system for accurately sensing current levels within an alternator, the system comprising:

an amplification means for amplifying or reducing a first signal indicative of a current level within the alternator to produce a second signal indicative of the current level;

a modification means for adjusting the level of amplification or reduction of the amplification means; and

a processing means for controlling the modification means based upon at least one of the second signal and a third signal based upon the second signal, and for processing at least one of the second signal and the third signal to determine a current measurement value;

wherein the processing means causes the modification means to step down a gain of the amplification means when the current measurement value exceeds a first threshold, and the processing means causes the modification means to step up the gain of the amplification means when the current measurement value falls below at least one of the first threshold and a second threshold.

14. (Amended) A method of accurately sensing current levels within an alternator, the method comprising:

providing a differential amplifier configured to receive a first indication of a current level within the alternator at a first input port and to provide a second indication of the current level at an output port;

providing a processor in communication with a switching element of the differential amplifier and the output port;

receiving the first indication of the current level;

determining at the processor at least two measured current values based upon the second indication;

switching a status of the switching element to

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reduce a gain of the differential amplifier when the measured current values increase from being below a first threshold to exceed the first threshold; and

switching the status of the switching element to increase the gain of the differential amplifier when the measured current values fall from above a second threshold to below the second threshold;

wherein the switching of the status of the switching element is caused by the processor based upon the measured current values.

22. (New) The system of claim 13, wherein the first threshold is identical to the second threshold.